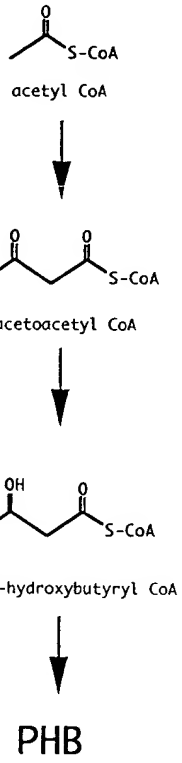
O
S-CoA
acetyl CoA
O
O
S-CoA
acetoacetyl CoA
OH
O
S-CoA
R-3-hydroxybutyryl CoA
PHB

Fig. 1

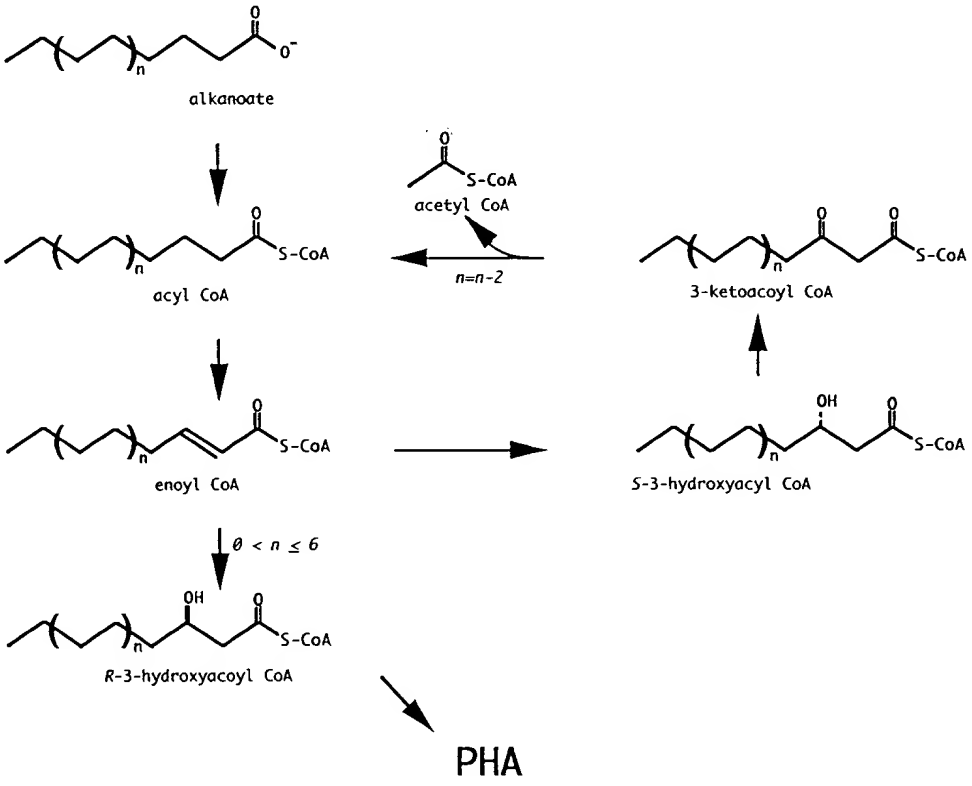

Fig. 2: Biosynthesis of PHA

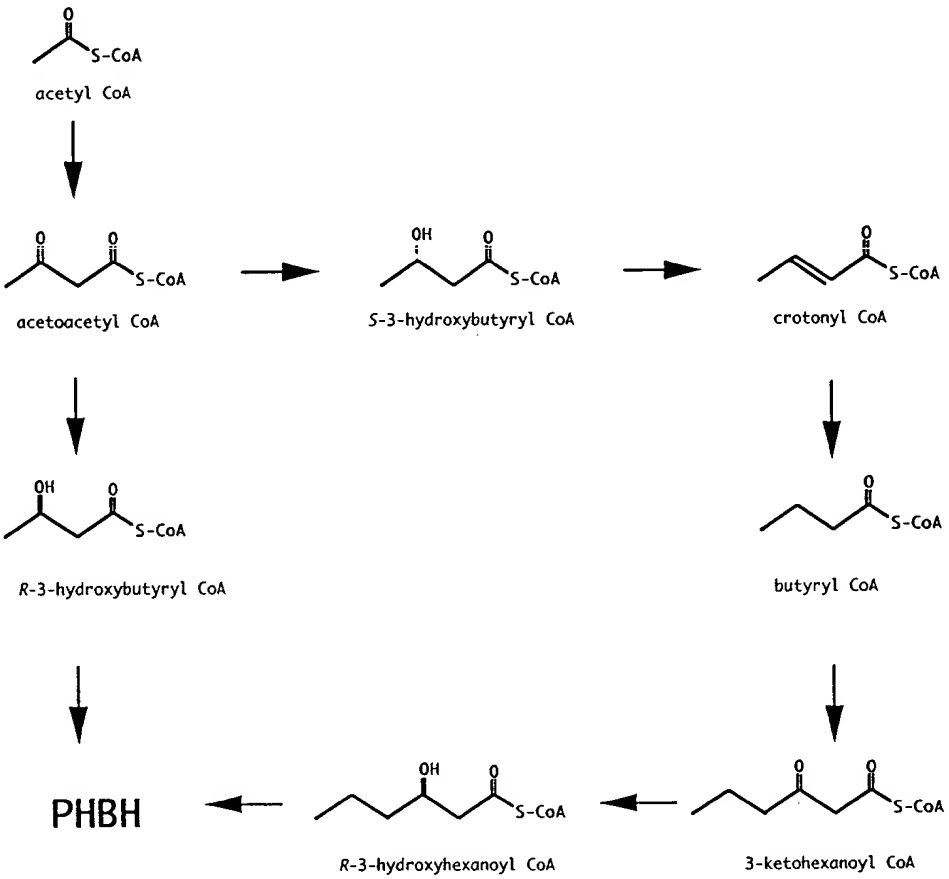
acetyl CoA
acetoacetyl CoA
S-3-hydroxybutyryl CoA
crotonyl CoA
R-3-hydroxybutyryl CoA
butyryl CoA
PHBH
R-3-hydroxyhexanoyl CoA
3-ketohexanoyl CoA
S-CoA
OH
O

Fig. 3

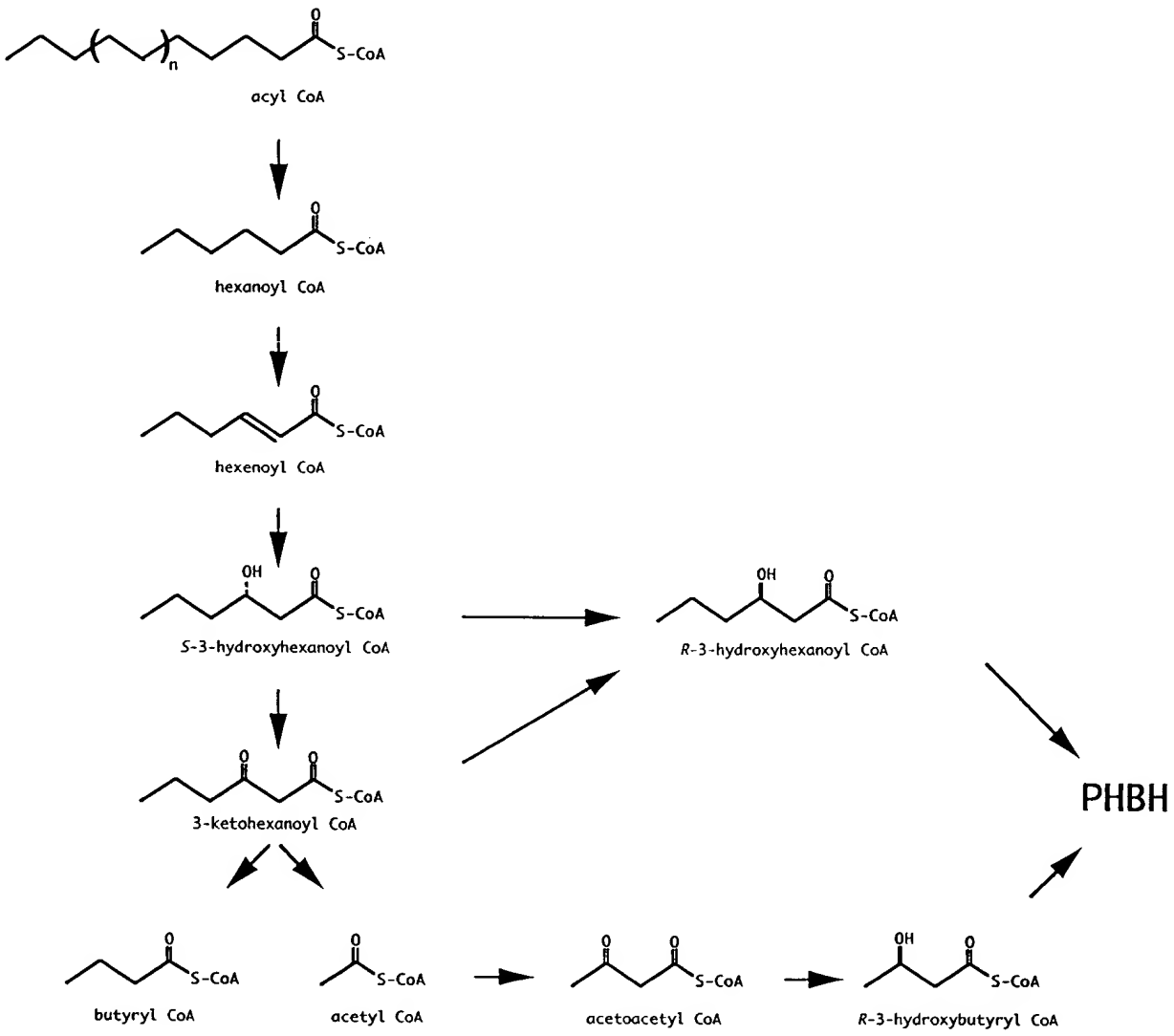

Fig. 4: Biosynthesis of PHBH using the fatty acid oxidation pathway

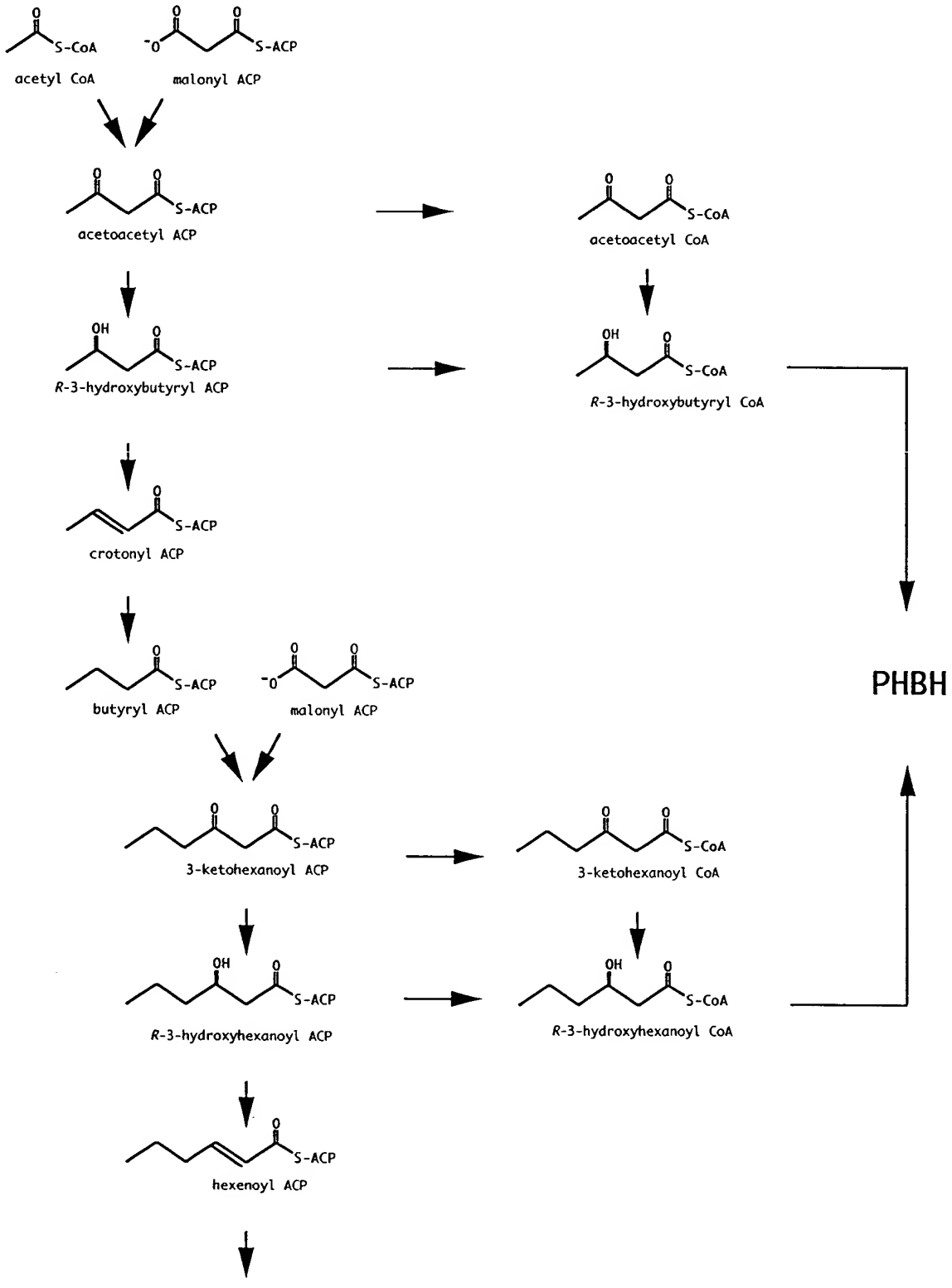

Fig. 5: Biosynthesis of PHBH using the fatty acid biosynthesis pathway

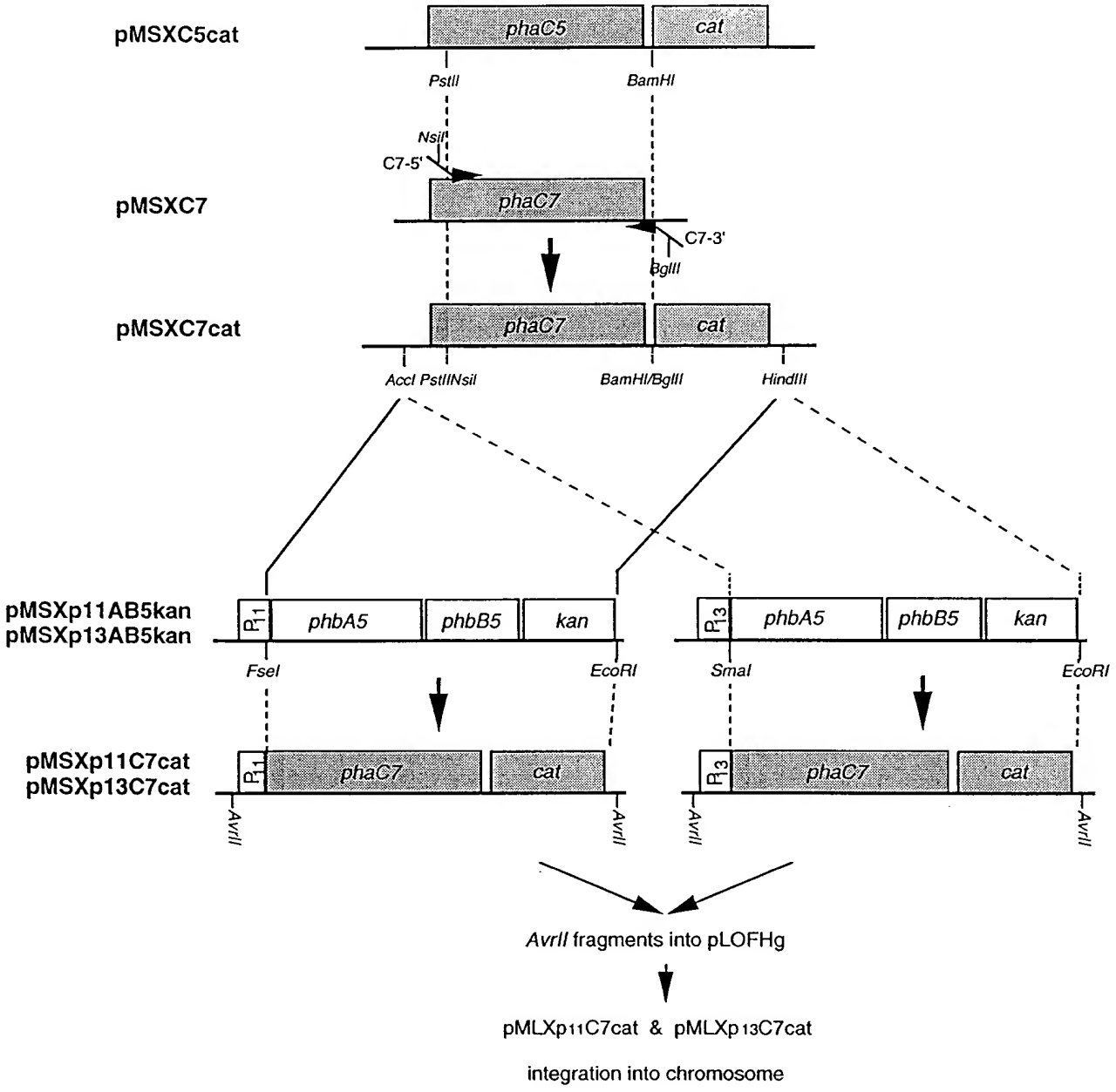

Fig. 6 : Construction of pMLXp11C7cat and pMLXp13C7cat for integration of the PHA polymerase gene from *N. salmonicolor* on the chromosome of *E. coli*

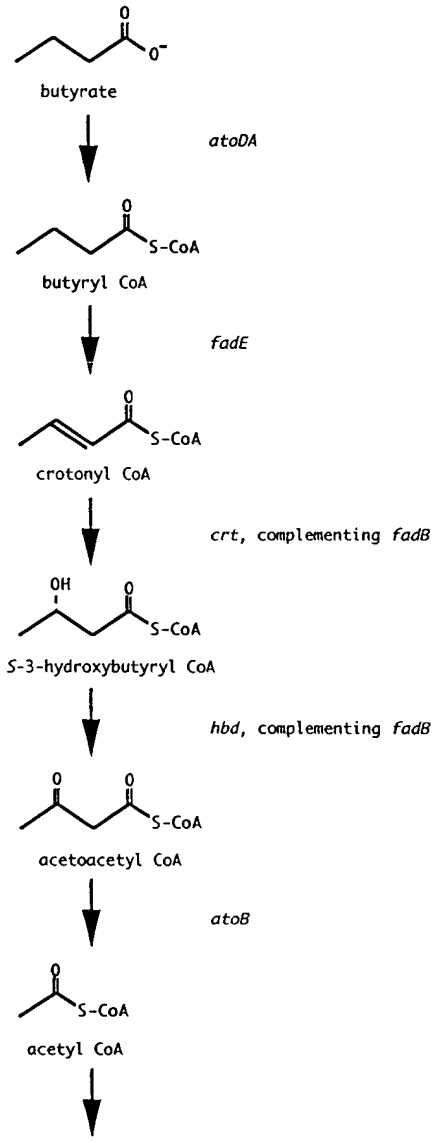

Fig. 7: Selection for crotonase and hydroxybutyryl CoA dehydrogenase genes by complementation of an *E. coli fadB* mutation

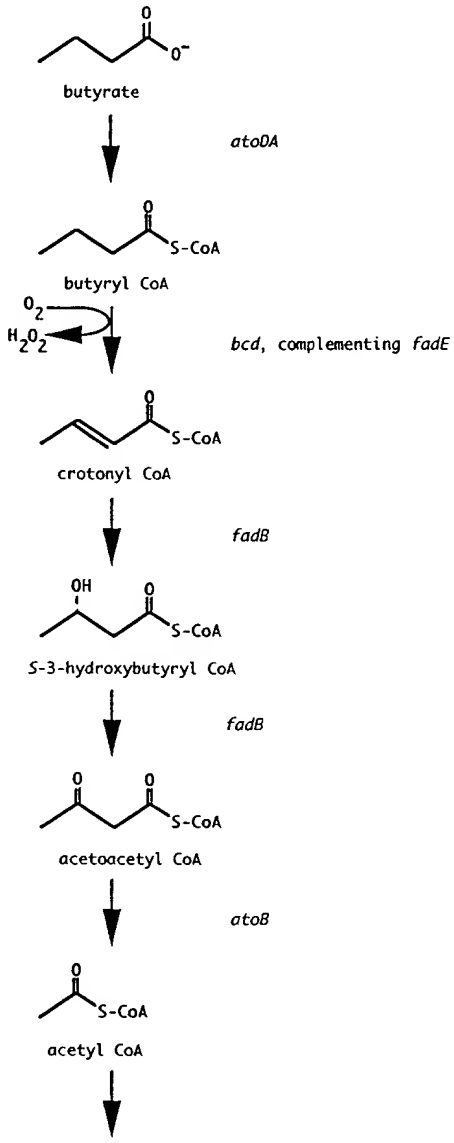

Fig. 8: Selection for butyryl CoA dehydrogenase genes by complementation of an *E. coli* strain that is phenotypically *fadE* defective

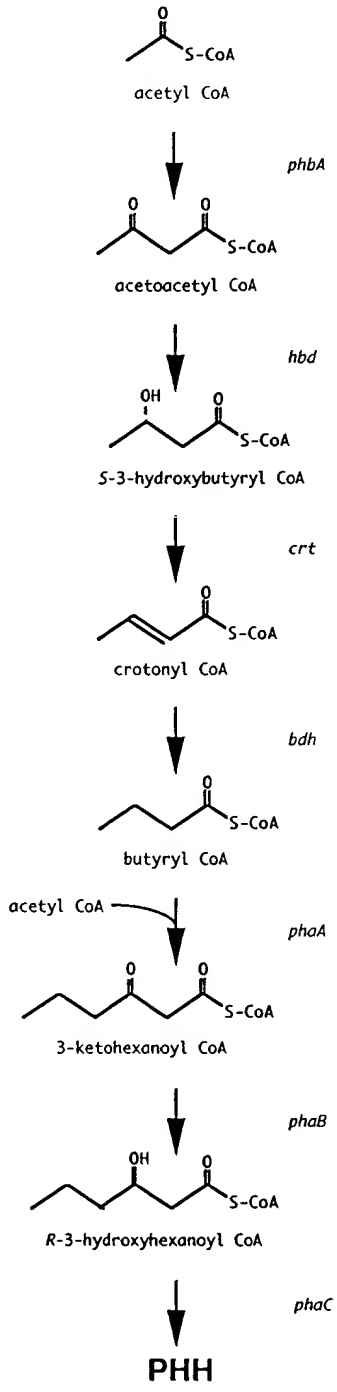

Fig. 9 : Selection for the PHBH recombinant pathway in *E. coli* using the PHA polymerase gene from *P. putida, phaC.*

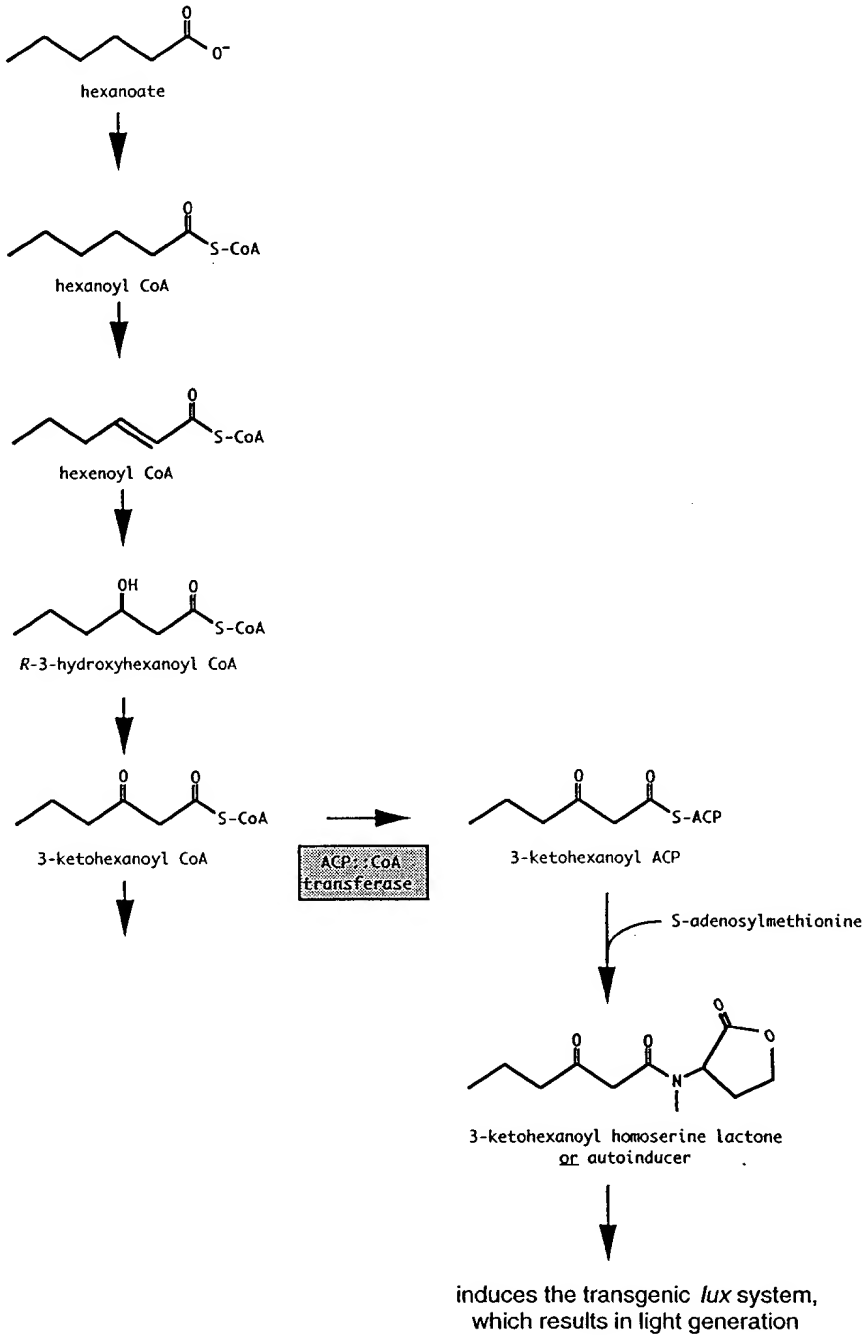

Fig.10 : Screening procedure for genes encoding enzymes that convert acyl ACP to acyl CoA with the use of the *Vibrio fischeri lux* system.